



United States
Department of
Agriculture

Foreign
Agricultural
Service

Washington, D.C.
20250

The Honorable Charles E. Grassley
Chairman
Committee on Finance
219 Dirksen Senate Office Building
Washington, D.C. 20510-6200

Dear Mr. Chairman:

This is to follow up on our interim response to your letter of May 20, 2003, regarding the potential impact of competition from Brazil on our soybean producers in the United States.

Please find enclosed information on each of the topics addressed in your letter, as well as a general background on Brazil's soybean production and the biotech soybean situation in that country. This information was compiled by various agencies within the U.S. Department of Agriculture, including the Foreign Agricultural Service and the Economic Research Service. Also enclosed are several articles that we hope will be useful for your reference.

Again, thank you for your interest in this area. We hope that this reply will be helpful.

Sincerely,

A. Ellen Terpstra
Administrator

Enclosures

General Background on Brazilian Soybean Production

Soybeans are the largest crop in Brazil, planted on 15.6 million hectares in 2002 (USDA Production, Supply, and Demand View 2002). Soybean planting is centered in the Mato Grosso, Paraná, and Rio Grande do Sul regions, which account for nearly 65 percent of total soybean area, though 15 states have significant acreage planted to soybeans each year. During the past 5 years, Brazil has increased the area under soybean cultivation by 5.5 million hectares or 43 percent, while also increasing production by 20.7 million tons or 66 percent.

This unusually strong expansion can be largely attributed to a massive devaluation in the Brazilian currency relative to the U.S. dollar during 2001 and 2002, when the Brazilian *real* declined nearly 95 percent (from about 2.0 R\$/US\$ in Jan 2001 to 3.9 R\$/US\$ in October 2002). The currency devaluation acted to radically increase relative returns on exported soybeans, which are traded in the international market at U.S. dollar parity prices. Various other factors also contributed to the increase in production:

1. Advances in agricultural technology have led to higher yields through variety improvements and adoption of moisture-saving no-till practices.
2. Extensive research in soybean cultivars by EMBRAPA, the leading agency for agricultural research.
3. The cost of transportation to export markets has been reduced.
4. The ability to have large-scale operations has increased.
5. A favorable exchange rate policy has lead to stronger soybean prices relative to other crops.

Agricultural consultants have estimated that in the 2002/03 growing season alone, soybean profits exceeded production costs by 30 percent. This remarkable commercial incentive has spurred large-scale investment in new land and equipment in Brazil, and fueled the boom in soybean production. Land resources are being reallocated to soybeans from less profitable crops and from pasture, while land clearing in virgin savannah regions has also accelerated. The potential for additional agricultural expansion in Brazil is equal to, if not greater than, total cropland in the United States, and is conservatively estimated at 170 million hectares or more.

A very significant element in the sustained growth of soybean production has been the improvement in the terms of trade for the sector. Brazil has had a history of having an overvalued exchange rate that has made costs in U.S. dollars very high. The *Real Plan* in 1994 brought down inflation, reduced trade tariffs and held the exchange rate relatively constant through 1998. During this period, domestic producers took advantage of tariff incentives to import equipment and technology. The devaluation of the *real* at the beginning of 1999 provided a big stimulus to soybean and products export performance.

The gap between Brazilian and U.S. soybean production is declining fast. In the 2003/04 growing season, the difference in total cultivated soybean area is less than 10 million hectares, while the gap in soybean production is slightly more that 21 million tons.

Given the current rate of expansion in Brazil, it will take 5 years or less for them to equal U.S. production levels. Over the next century should growth in world soybean demand warrant it, and profitability permit it, Brazil's soybean area could conceivably rise by 50-100 million hectares. Under these circumstances Brazil's soybean production capacity would increase by 150-300 million tons at current yield levels. In the long term, whatever the rate of growth, it is clear that Brazil has the capacity to meet or exceed world demand for soybeans by tapping its ample arable land resources. At the same time, being the world's leading low-cost producer of premium quality soybeans, Brazil (unlike other countries) has the capacity to prosper in an environment of markedly lower international commodity prices.

Biotech Soybeans in Brazil

Actual use of *Roundup Ready* soybean varieties will represent from ten to twenty percent of this year's crop even though these varieties are not legally authorized. In recent months, concerns regarding the illegal planting of herbicide-tolerant soybeans in Brazil have escalated. While the battle over the approval and use of biotech products in Brazil has been on hold for the past 5 years, Brazilian producers in the southern state of Rio Grande do Sul are smuggling genetically enhanced soybean seeds from Argentina. To minimize producers' losses, earlier this year, the Brazilian government approved the export of 6 million tons of harvested biotech soybeans, equivalent to 12 percent of Brazil's annual harvest. However, the planting of biotech crops is prohibited for next year's crop (2003/2004).

As is the case in the United States, growers in Brazil have adopted *Roundup Ready* weed control programs for the simplicity of weed control that relies on one herbicide to control a broad spectrum of weeds without crop injury or crop rotation restrictions. According to data from Rio Grande do Sul producers' use of herbicide on soybeans has been dramatically reduced by the introduction of *Roundup Ready* soybean varieties. They also report a decrease in herbicide applications. Monsanto estimates that if the Brazilian Congress approves the use of *Roundup Ready* soybeans, by 2004/2005 close to 50 percent of the soybean area planted will be *Roundup Ready* soybeans with area continuing to increase to 70 percent within the next decade. By comparison, the United States reports 80 percent of U.S. soybean acres planted with biotech soybeans in 2003. For Brazilian farmers, the use of herbicide-tolerant varieties will result in higher yields and lower herbicide and weed management costs. However, they will also have higher seed costs due to licensing.

QUESTIONS ON BRAZILIAN SOYBEAN PRODUCTION

1) WTO Reporting Requirements, Definitions and Disciplines

Has Brazil fully notified in accordance with its WTO obligations tax, credit, input, transportation, investment, or energy subsidies (discussed below) that affect agricultural production?

No. Brazil is behind schedule in notifying domestic subsidies to the WTO. Brazil has notified its domestic subsidies through 1997/98. The most recent notification for Brazil is attached at the end of this report.

The original instructions to Members were for notifications of domestic support to be submitted to the WTO for review within three months of the end of the calendar (or marketing, fiscal, etc.) year in question [from WTO/G/AG/2 (restricted, dated 30 June 1995)]. However, this tight deadline has been difficult for most members to meet. The last U.S. submission was for 1999.

Every notification that has been submitted by Brazil has been thoroughly reviewed within USDA by FAS commodity analysts, country specialists, and in-country attachés, as well as by ERS and other agencies. We have taken every opportunity to request more information on items of concern. Attached are 1) a summary of questions by USDA of every Brazil notification on domestic support, starting from 1995, and, 2) the official Secretariat notes from the most recent WTO Committee on Agriculture meeting that reviewed the last Brazil notification.

If so, are these subsidies being calculated properly and reported to the WTO in accordance with Brazil's obligations? Should new reporting requirements be considered to capture the value of such subsidies, or are existing WTO reporting requirements sufficient?

Notification is an important step in monitoring WTO Member activities with regard to obligations under the WTO agreements, but there are, no doubt, areas for improvement. There may be an opportunity during the current negotiations within the Doha Development Agenda to make changes to the current reporting requirement.

However, another important consideration is the comprehensive nature of the negotiated WTO agreements. For instance, as a (self-declared) developing country, Brazil may take advantage of Article 6.2 of the Agreement on Agriculture (regarding aggregate measurement of support) (AMS), which states:

“In accordance with the Mid-Term Review Agreement that government measures of assistance, whether direct or indirect, to encourage agricultural and rural development are an integral part of the development programmes of developing countries, investment subsidies which are generally available to agriculture in developing country Members and agricultural input subsidies generally available to low-income or resource-poor

producers in developing country Members shall be exempt from domestic support reduction commitments that would otherwise be applicable to such measures, as shall domestic support to producers in developing country Members to encourage diversification from growing illicit narcotic crops. Domestic support meeting the criteria of this paragraph shall not be required to be included in a Member's calculation of its Current Total AMS."

Thus, even though more detailed reporting would most likely provide more complete data regarding the type of subsidy factors and amounts involved, there would be no immediate impact on Brazil's AMS calculation.

2) Tax Policies

Are Brazilian tax policies helping to drive the expansion of soybean production in Brazil?

Are tax credits, rebates, or deferments available to Brazil's soybean producers or marketing groups?

Are federal, state, or local taxes reduced, deferred, or waived if a soybean product is exported?

An important factor that greatly contributed to the competitiveness of Brazilian agribusiness, and the soybean sector in particular, was government's exemption of exports of raw materials and semi-manufactured products from the interstate movement tax (*Imposto Sobre Circulação de Mercadorias e Serviços*, or ICMS). Under the ICMS system prior to the change, state governments assessed the interstate movement of soybeans at a rate of 13 percent, whether exported or held for domestic use. Soybean meal and oil was not taxed if destined for export and taxed at a rate of 11 and 8.5 percent respectively if held for domestic use, such as for processing. This tax system created a relative tax advantage for exports of meal and oil over soybeans. In September 1996, Brazil exempted from the ICMS tax, the exports of semi-manufactured products and raw materials, including soybeans. The removal of the relative tax advantage for meal and oil exports has had a major impact on the soybean sector, with exports shifting from oil and meal into uncrushed beans, resulting in a dramatic rise in soybean exports. In 1999, 58 percent of export revenues from the soybean complex came from uncrushed beans, compared with a share of 20 percent in 1995, according to a leading Brazilian agribusiness consulting company, FNP.

3) Credit Policies

Reportedly, soybean growers in Brazil are receiving credit from a variety of sources (e.g., the government, Banco do Brazil, equipment and input suppliers, exporters, and processors) at rates substantially below the rate of inflation and foreign exchange risk. For instance, it is reported that growers may be receiving credit from the government at 8.75 percent, whereas the rate of inflation is 12.5 percent. It is also reported that equipment manufacturers offer credit to growers at rates and

terms substantially below the commercial rates and foreign exchange risk offered by banks. In each instance – whether it is government, equipment supplier, or other - more information is needed with respect to the policies that may be facilitating the offering of credit to soybean growers at subsidized rates.

In general, Brazilian soybean farmers tend to be in good financial condition after several years of favorable domestic and international prices. It is estimated that close to 90 percent of agricultural chemicals are sold in crop terms (swap); traders cover about 50 percent of soybean crop financing; commercial banks, using the government-required cash deposit focused on agriculture with government backing, can cover up to 60 percent of soybean producers' needs; and, input dealers cover up to about 25 percent.

In 2000, Brazil implemented various credit programs intended to support specific activities, regions and sub-sectors. This is the major source of credit for oilseed farmers in southern Brazil, where farms tend to be small. Under this system, banks are required to set aside a 25 percent reserve for credit to farmers. The official interest rate is currently set at 8.75 percent per year. In the newer, higher yielding regions in the center - west and the north, farms are too large to gain significant assistance from the government. In these regions soybean processors, exporters and input suppliers provide the bulk of production financing. Large producers also make use of futures markets at a time when the devaluation of the *real*, vis-à-vis the U.S. dollar, has led to forward selling of the new crop. This has facilitated the financing of land clearing, inputs, and planting costs.

4) Input Prices

Do government policies influence input prices for Brazilian farmers, leading to prices that are sharply lower than prices paid by U.S. growers for comparable inputs?

Rampant soybean seed piracy affords Brazilian growers a competitive advantage; however, are there other high technology inputs, such as farm equipment, available to Brazilian growers at discounted prices due to the infringement of intellectual property rights?

Are there any government policies that can explain sharply lower prices for farm machinery in Brazil?

Are there any government policies that influence the market for herbicides, leading to lower prices in Brazil than in the United States?

We are not aware of government policies that influence prices on inputs purchased by Brazilian farmers, nor are we aware of other high technology inputs that are available to Brazilian growers at discounted prices due to the infringement of intellectual property rights. We are also not aware of government programs that

cause lower prices for farm machinery or herbicides in Brazil. The following reasons may explain why Brazilian farmers pay less for herbicides and fungicides 1) benefits from the exchange rate, 2) lower import tariffs for inputs and/or ingredients used to produce herbicides and fungicides, and 3) local competition among companies and exclusive contracts with farmers. In addition, major manufacturers like John Deere assemble farm machinery in Brazil, therefore final equipment sales prices would reflect lower input and labor costs.

5) Transportation Policies

How are Brazilian infrastructure improvements, and in particular federal highway construction projects, being financed?

Who pays the funds?

Since much of the highway use in the *Cerrados* area is to support agriculture, do agricultural producers contribute to the cost?

How does their contribution compare to contributions from other users?

In Brazil, the private sector initiative has taken the lead on infrastructure development. Cargill's exports currently go through southeast Mato Grosso to the port of Santos, Sao Paulo (SP), and the port of Paranagua, Paraná (PR), but Cargill is planning to export a significant portion of the soybean crop it purchases in Mato Grosso through the port of Santarem, in Pará (PA), at the junction of the Tapajos and the Amazon rivers. Cargill estimates that about 800,000 MT of soybeans will be loaded through this new port. Cargill is also investing in storage facilities in Mato Grosso to store the State's soybean production in the cities of Sinop and Agua Boa. To get to Santarem, Cargill will use the Madeira River as an alternative (the Maggi Group is the only one currently using this river), with road transport on the BR-163 interstate, the Cuiaba-Santarem highway. BR-163 connects Cuiaba, the capital of Mato Grosso with Santarem, located on the Amazon River. BR-163 is being paved by the Mato Grosso producers, but close to 625 miles remains unpaved. Reports indicate that the federal government has authorized funding for completing the paving of BR-163, but the budget falls well short of the total cost. The Mato Grosso government is trying to complete improvement of the road through at least Itaituba, PA, 360 miles north of the Mato Grosso border, which will give soybeans from central Mato Grosso a direct export avenue to the north. At Itaituba, the soybeans could be transferred to barges and moved north via the Tapajos River to either Santarem or Itacoatiara.

Access to transportation is one of the most important factors in determining the value of agricultural land in Brazil. GOB investments in transportation are both praised when they occur and criticized for being too small. In contrast with the U.S. soybean crop, for example, where probably close to 70 percent is moved by waterway, as much 65 percent of Brazil's crop is transported by truck. Clearly, when it comes to moving crops from farm to processing facilities or ports, the United States is more efficient than Brazil.

Though the GOB has recognized the need to improve its rail, barge, and roadway systems, it has not been able to allocate the funds needed to markedly improve infrastructure.

The same kind of information is needed for state highways, waterways, and rail. This information on transportation financing is particularly important due to the draft Doha Round agricultural text prepared by Agriculture Negotiating Group Chairman Harbinson that proposes to declare agricultural transportation subsidies for developing countries as "green box" subsidies that would be exempt from domestic support reduction commitments under the WTO Agreement on Agriculture.

Transportation and other infrastructure projects fall under the general services category of the current green box and are already exempt from reduction commitments. The transportation subsidies mentioned in the Harbinson revised draft modality paper are transportation payments, i.e., the shipping costs of agricultural products. We are concerned about elements of Attachment 10 of the Harbinson text, including the transportation subsidies provisions.

6) Investment

More information is also needed on domestic and foreign investment that may be fueling expansion of soybean acreage in Brazil. Do we know which countries are investing in Brazilian soy production and why?

Does this funding come from private or government investment sources?

To what extent does government policy encourage investment in agriculture?

Is agricultural production required on new land to maintain ownership or reduce taxes?

What penalties do farmers face if they do not develop acquired land within certain time periods?

Because of its profitability, many firms and individuals are willing to invest in Brazilian soybean production. Producers are able to secure financing from a large number of sources including input and equipment suppliers, traders, soybean processors, banks, landowners, and the government of Brazil (GOB). The Brazilian soybean industry uses some international capital to finance the expansion in Brazilian soybean area; however, much of the capital comes from the sale of soybeans and products. The United States is likely the primary international origin for private investment in Brazilian soybean production, followed by the European Union and Japan. Though still limited, U.S. farmers have directly invested in Brazilian production and there are discussions about setting up investment funds to allow U.S. farmers to invest indirectly in Brazilian agriculture. Japanese firms have also made significant investments in northern Brazil for

the production of identity preserved soybeans. We are unaware of any foreign government investment in Brazilian soybean production.

Low land and labor costs, along with excellent soybean prices in terms of the Brazilian *real* are the most important factors explaining Brazil's area expansion. Two-year term Government credit for soybean producers is available up to an amount of R\$200,000 (~US\$71,440 in June 2003) for farmers in the Center-West and northern regions as well as soy producers in Maranhão, Piauí and Bahia. Most of the increase in soybean area is occurring in these areas. For all other soy producing states, the limit is R\$150,000 (~US\$53,580 in June 2003). The interest rate for these programs is 8.75 percent per year.

The impact of the various financing sources varies by region. On average, southern producers farm fewer hectares so GOB credit covers more of their production costs. Concurrently, the options for investment beyond their established crop area are limited. Producers in the new lands in the Center-West and the northern areas farm much larger tracts and are able to readily invest in new cropland.

Brazil has a restrictive tax system that penalizes land that is not in production. Depending on the location, 20, 50, or 80 percent of a producer's land must remain forested. If a producer does not prove that the remaining land is in production, he is assessed taxes at a prohibitive rate. This discourages the use of land as an investment and encourages the expansion of production.

7) Energy Policies

ERS reports that diesel fuel is sold to farmers at a single, uniform price throughout Brazil, even though costs to supply diesel to the Center-West are substantially higher due to transportation costs. This policy provides a fuel subsidy to farmers in the Center-West and further encourages development of the *Cerrados* area.

How does the fuel subsidy program work? Who is eligible? Is the subsidy available only for on-farm use of fuel, or is it also available for the transportation of agricultural goods? What is the estimated value of the fuel subsidy in recent years and currently? Are there other energy or fuel subsidies being made available to Brazilian agriculture, processing, and transport?

Brazil no longer subsidizes fuel production or distribution. According to the National Petroleum Agency (ANP), there are no energy or fuel subsidy programs currently made available to Brazilian agriculture.

The uniform fuel price system was effective from 1981 to 1992 and had the objective of stimulating and opening the exploration of the *Cerrados* area in Brazil. Through this program, the price of the fuel sold in these areas included a subsidy of price equalization, allowing for the fuel to be transported at costs artificially low, besides allowing for the diesel used by farmers to run equipment to benefit from the same low price. This policy

stimulated the expansion of the commercial agriculture in the *Cerrado* areas, which, without fuel subsidies, would have had difficulties in sustaining profitable production.

Here is some general information regarding fuel price policies in Brazil. Since 1938 until recently, the Federal Government of Brazil established fuel prices with a complex subsidy system. In 1990, the concept of price setting by the market began to be introduced, but the *Lei do Petróleo*, Law 9.478/97, created a real push to more effectively deregulate fuel prices. Until the publication of the *Lei do Petróleo*, which regulated the opening of the oil and gas sector and created ANP, fuel prices in Brazil were set through acts from the *Ministério da Fazenda*. In 1997, the *Lei do Petróleo* defined a transition period for deregulation to be completed by December 31, 2001. This market opening process allowed for gradual elimination of subsidies for price and freight costs of petroleum by-products; gradual liberalization of fuel prices; liberalization of imports for natural gas (April 15, 1998), liquefied petroleum gas (December 30, 1998), petrochemical products (October 20, 1999), automotive oil (May 5, 1998), petrochemical naphtha (February 24, 2000), petroleum (October 2, 1998), lubricants (July 30, 1999) and solvents (December 27, 2001).

The final period of transition started in January 2002 and allowed for liberalization of producer prices and liberalization of imports of gasoline and diesel. Therefore, effective January 2002, there is a regime of free prices for the whole fuel production and commercialization chains (refining, distribution and retailing). There are no longer any price tables, maximum or minimum prices, participation in the price formulation, or need for previous authorization from ANP to readjust fuel prices.

In keeping with the intent of Article 8 of the *Lei do Petróleo*, ANP monitors fuel prices that are charged by the distributors and retailers (gas stations) through a weekly price survey. The price survey (*Levantamento de Preços*) and *Margens de Comercialização de Combustíveis* extends to regular gasoline, alcohol, diesel, and natural vehicular gas. A company called Análise & Síntese Pesquisa e Marketing S/C Ltda performs this service. The results are available to the public on a weekly basis.

8) Environmental Consequences

The International Food Policy Research Institute has reported, "The generally positive trends in food production may mask negative trends in the underlying biophysical capacity of ecosystems, e.g., nutrient mining, soil erosion, and over-extraction of groundwater resources." What are the environmental consequences of Brazil's land clearing policies in the *Cerrados*?

Are soil resources being mined of their nutrient values? Is soil erosion being addressed in Brazil?

The environmental consequences of agricultural expansion in Brazil are many-faceted and highly complex, and are not unlike those recorded on other continents as human migration and agricultural development altered the face of virgin lands and ecosystems.

The most obvious and important consequences of agricultural expansion are damage to existing natural ecosystems, loss of bio-diversity, and extinction of plant and animal species. Scientists in Brazil report that bio-diversity is declining in settled areas of the *Cerrados* (Savannah) and in *Amazonia*, while the number of endangered or threatened species is rapidly increasing. Scientists also report that the remaining areas of native *Cerrados* have biodiversity importance that rivals that of equivalent areas of Amazonian forest. The *Cerrados* is essentially an inverted forest and the small weathered trees and shrubs have extensive root systems. Although the *Cerrados* has often been discarded as “worthless scrubland,” it is actually an important carbon sink and plays a vital role in the atmospheric carbon balance. (World Wildlife Foundation report on Trade-Driven Soy Agriculture in Brazil and Impacts on Sustainability:
<http://www.balancedtrade.panda.org/pdf/wwf.brazilworkshop.finalreport.doc>)

To date, there is no evidence that USDA is aware of that native soil nutrient values are being mined from the introduction of soybean cultivation. The soil’s natural condition is being altered to support farming through cultivation, liming, and fertilization. Native *Cerrados* soils are high in acid and low in phosphorus, and for generations were not considered capable of supporting cultivated crops. Depending on one’s point of view, the changes that Brazilian farmers make to the native soil to create a more viable medium for growing crops could be considered “soil amendments,” and thus improvements on the status quo. Soil erosion is being managed fairly well in general, while the soil resource itself is plentiful (measuring many meters in depth in commonly cultivated regions). Soil erosion levels would naturally be lower if the original savannah vegetation cover were maintained, but the same could be said for farming conditions in the U.S. Midwest if it were in its native grassland state.

Land use is intensifying in the *Cerrados* region, where the most recent growth in soybean cultivation is occurring. But this intensification in use is being addressed with increasing levels of human management and improved agricultural techniques and technology. The least intensive land use is native savannah, followed by pasture, and lastly soybeans. Whether land moves from either savannah or pasture to cultivated soybeans, the land use level increases dramatically. But in current practice, Brazilian soybean farmers radically increase their attention to soil conservation (land leveling, direct drilling of seed, maintenance of stubble) and optimum fertilization and liming. The investment in the land and its care increases dramatically as the farmer increases investment and expectations for commercial returns.